

CLAIMS

1. A steam and gas turbine installation comprising a gas turbine unit (A) and a steam turbine unit (B), in which the gas turbine unit (A) is built up in part of at least:
 - a gas compressor mounted on a compressor shaft (4), a combustion chamber (2) and a gas turbine (3) mounted on a gas turbine shaft (5); and in which steam turbine unit (B) is built up in part of:
 - a closed steam line (6), at least comprising:
 - 10 a pump (7), a steam generator (8), which is in heat-exchanging contact with combustion gases (3b) from the gas turbine (3) during operation, a steam turbine (9) mounted on a steam turbine shaft (10), as well as a condenser (11), and in which the steam turbine drives the gas compressor of the gas turbine unit during operation, characterized in that one or
 - 15 more of said steam turbines is an impulse steam turbine.
2. A steam and gas turbine installation according to claim 1, characterized in that the steam turbine and the gas compressor are mounted on the same shaft (4, 10).
3. A steam and gas turbine installation according to claim 1 or 2, characterized in that the gas turbine is mounted on a different shaft (5) than the gas compressor.
4. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that the steam turbine drives at least one further gas compressor (1'), which is connected in series with the first gas compressor (1) via an intercooler (14).
5. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that at least one further steam turbine (9') is connected in series with the steam turbine (9).
- 30 6. A steam and gas turbine installation according to claim 4 or 5, characterized in that the gas compressors (1, 1') and the steam

turbines (9, 9') are mounted on the same shaft (4, 10).

7. A steam and gas turbine installation according to claim 4 or 5, characterized in that one gas compressor (1, 1') and one steam turbine (9, 9') are mounted on a respective common shaft (4, 10; 15, 16).

5 8. A steam and gas turbine installation according to any one or more of the claims 4 - 7, characterized in that the water flowing through the steam line (6) is in heat-exchanging contact during operation with the air flowing through the intercooler (14).

10 9. A steam and gas turbine installation according to claim 8, characterized in that said heat-exchanging contact takes place according to the uniflow principle.

10. A steam and gas turbine installation according to claim 9, characterized in that said heat-exchanging contact takes place according to the counterflow principle.

15 11. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that one or more of said steam turbines is a radial steam turbine.

20 12. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that one or more of said gas compressors is a centrifugal gas compressor.

13. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that one or more of said gas compressors is an axial gas compressor.

25 14. A steam and gas turbine installation according to any one or more of the preceding claims, characterized in that said steam generator is a once-through residual heat boiler.